## A Tunable Multi-feature Active Noise Cancellation Headset可調式多功能降噪耳機

## Principal Investigator 首席研究員

Commercial Partner 商業夥伴:



Dr Steve Mung Wai-yin 蒙偉賢博士 Research and Development Office 研究與發展事務處

## Award 獎項





Hearing sensitivity varies and some people may suffer from certain inaudible/intensive frequencies due to age growing or inborn or acquired hearing issues. This invention is an unprecedented headset that supports tunable active noise cancellation (ANC), tunable sound equalizer, and Bluetooth wireless technology. It allows users to hear their desired frequency by simply clicking a button in a configured mobile app. As an external aid, this multi-feature headset reinforces and evolves human hearing ability at all ages, from daily life to emergency situations. The invented electronic circuitry used in this headset allows simplicity, low-cost and flexibility compared to existing built-in fixed circuitries in the industry.

每個人的聽力敏感度都是獨特的,部分人由於年紀增長、天生或後天的 聽力問題而遭受到弱聽或對聲音過度敏感的困擾。這項發明是首個同時 支持可調式降噪、衡聲和無線藍牙技術的耳機。只需在配置的手機軟件 上按一個按鈕,用家便能按需要調出理想的聲音頻率。作為一個外用輔 助設備,這款多功能耳機能夠強化聽力,適合不同年齡人士使用,改善 日常生活,甚至是用於緊急救援。與業內現有的內置固定電路相比,該 發明使用的電子電路更簡單、更低成本和有更高的靈活性。

## Features & Applications 特點和應用

- **01** Multi-purposes supports both tunable ANC and sound equalizer working together in one device 多功能設備 一機同時運行可調式降噪功能和音質平衡功能
- Configured mobile app with 5 easy and tunable modes: ANC mode, pass through mode, alert mode, intensed mixed mode, and emergency mode 使用手機程式即可享5款音質調節:降噪模式、通透模式、警示模式、強效混合模式及緊急模式
- Makes users' our multi-tacking a stay alort even when enjoying music/having phone call
- *03* Makes users' ear multi-tasking stay alert even when enjoying music/having phone call 讓用家無論在聽音樂/通話時,都能保持警惕
- A helpful tool for rescue greatly lowers the unwanted ambient noise and amplifies the SOS signals from trapped people
  - 救援必備用品 大大降低不必要的環境噪音並放大受困者的求救信號
- Clams the target users (i.e. children, autism) by amplifying the particular comfortable sound or eliminating their unwanted frequency
  - 強化特定聲音或弱化不必要的噪音,幫助目標人群(如:幼兒或自閉症患者)回復平靜
- **06** Ameliorates elderly's age-related hearing loss and ensures their social communications 改善長者聽力衰退的狀況並保障他們的社交能力